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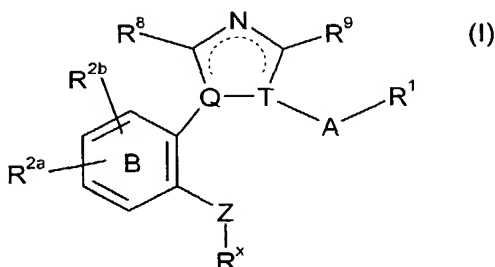
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(88) Date of publication of the international search report:
4 November 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PHENYL SUBSTITUTED IMIDAZOLE DERIVATIVES



(57) Abstract: Compounds of formula (I) or a pharmaceutically acceptable derivative thereof: wherein A, B, Z, R¹, R^{2a}, R^{2b}, R^x, R⁸, R⁹, Q, and T are as defined in the specification, a process for the preparation of such compounds, pharmaceutical compositions comprising such compounds and the use of such compounds in medicine.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/002831

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07D233/54 A61K31/4164 A61P19/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 01/19814 A (MERCK FROSST CANADA INC ; RUEL REJEAN (CA); LABELLE MARC (CA); LACOMBE) 22 March 2001 (2001-03-22) examples	1-16
Y	WO 02/15902 A (MERCK FROSST CANADA INC ; NANTEL FRANCOIS J (CA); TURNER MERVYN (CA);) 28 February 2002 (2002-02-28) examples	1-16
Y	EP 1 270 559 A (URIACH & CIA SA J) 2 January 2003 (2003-01-02) cited in the application examples; table 1	1-16
P, Y	WO 03/101959 A (GIBLIN GERARD MARTIN PAUL ; MILLER NEIL DEREK (GB); HALL ADRIAN (GB);) 11 December 2003 (2003-12-11) examples	1-16

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
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- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

27 July 2004

Date of mailing of the international search report

07/09/2004

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2004/002831

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 10-12
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 10-12 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/EP2004/002831

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0119814	A	22-03-2001	AT 259795 T	15-03-2004
			AU 7264200 A	17-04-2001
			WO 0119814 A2	22-03-2001
			CA 2384783 A1	22-03-2001
			DE 60008399 D1	25-03-2004
			EP 1216238 A2	26-06-2002
			JP 2003509419 T	11-03-2003
			US 6369084 B1	09-04-2002
WO 0215902	A	28-02-2002	AU 8655701 A	04-03-2002
			WO 0215902 A1	28-02-2002
			US 2002137746 A1	26-09-2002
EP 1270559	A	02-01-2003	ES 2159489 A1	01-10-2001
			AU 3931101 A	03-10-2001
			BR 0109445 A	03-06-2003
			CA 2403732 A1	20-09-2002
			EP 1270559 A1	02-01-2003
			JP 2003528086 T	24-09-2003
			NO 20024504 A	22-11-2002
			US 2003176481 A1	18-09-2003
			WO 0170704 A1	27-09-2001
WO 03101959	A	11-12-2003	WO 03101959 A1	11-12-2003